What is claimed is:

1. A method for manufacturing a low-resistance ITO film comprising a step of:

depositing an ITO film on a crystalline substrate having a temperature of 500-1000℃ by a pulsed laser vapor deposition method.

2. A method for manufacturing a low-resistance ITO film according to claim 1, wherein a crystal orientation of a surface of said crystalline substrate is receptive to a crystal structure of In_2O_3.

3. A method for manufacturing a low-resistance ITO film according to claim 1, wherein said crystalline substrate is one of a YSZ single crystal substrate, a substrate on which a c-axis oriented ZnO thin film is formed, a sapphire substrate, a SiC single crystal substrate and a silicon single crystal substrate.

4. A method for manufacturing a low-resistance ITO film according to claim 3, wherein said crystalline substrate is a YSZ single crystal substrate super-flattened to an atomic order by a heat treatment in the range of 1200-1500℃.

5. A method for manufacturing a low-resistance ITO film according to claim 2, wherein said ITO film is deposited in heteroepitaxial growth.

6. A method for manufacturing a low-resistance ITO film according to claim 1, wherein indium oxide is deposited lattice by lattice in an atomic layer growth mode at a low deposition rate on said substrate.

7. A method for manufacturing a low-resistance ITO film according to claim 1, wherein said ITO film has a resistance of less than $1 \times 10^{-4}\ \Omega cm$.

8. A method for manufacturing a low-resistance ITO film according to claim 1, wherein said ITO film has a SnO_2 content of 2.8 - 10.5 mol%.

9. A method for manufacturing a low-resistance ITO film comprising a step of:

depositing ITO film on a crystalline substrate by one of a low-voltage sputtering, an oxygen cluster beam deposition, a chemical vapor deposition, a metal organic chemical vapor deposition, a metal organic chemical vapor deposition - atomic layer deposition, and a molecule beam epitaxy.

10. A method for manufacturing a low-resistance ITO film according to claim 9, wherein said ITO film is deposited on a crystalline substrate having a temperature of 500-1000℃.

11. A method for manufacturing a low-resistance ITO film according to claim 9, wherein a crystal orientation of a surface of said crystalline substrate is receptive to a crystal structure of In_2O_3.

12. A method for manufacturing a low-resistance ITO film according to claim 11, wherein said crystalline substrate is one of a YSZ single crystal substrate, a substrate on which a c-axis oriented ZnO thin film is formed, a sapphire substrate, a SiC single crystal substrate and a silicon single crystal substrate.

13. A method for manufacturing a low-resistance ITO film according to claim 12, wherein said crystalline substrate is a YSZ single crystal substrate super-flattened to an atomic order by a heat treatment in the range of 1200-1500℃.

14. A method for manufacturing a low-resistance ITO film according to claim 11, wherein said ITO film is deposited in heteroepitaxial growth.

15. A method for manufacturing a low-resistance ITO film according to claim 9, wherein said ITO film has a resistivity lower than 1 X 10^{-4} Ωcm.

16. A method for manufacturing a low-resistance ITO film according to claim 9, wherein said ITO film has a SnO_2 content of 2.8 - 10.5 mol%.

17. A low-resistance ITO film having a resistivity lower than 1 X 10^{-4} Ωcm and a Sn dopant activity defined as [(carrier density(cm^{-3})/Sn density in said ITO film (number of Sn/cm^3) X 100] greater than 80%.

18. A substrate having a ITO film deposited thereon comprising:

a crystalline substrate, and

an ITO film deposited on said crystalline substrate having a temperature of 500-1000℃ by a pulsed laser deposition.

19. A substrate having a ITO film deposited thereon comprising:

a crystalline substrate, and

an ITO film deposited by one of a low-voltage sputtering, an oxygen cluster beam deposition, a chemical vapor deposition,

a metal organic chemical vapor deposition, a metal organic chemical vapor deposition - atomic layer deposition, and a molecule beam epitaxy.

20. A substrate having a ITO film deposited thereon according to claim 18, wherein a patterning is formed in said ITO film.

21. A substrate having a ITO film deposited thereon according to claim 19, wherein a patterning is formed in said ITO film.

22. A substrate having a low-resistance ITO film deposited thereon comprising:

a crystalline substrate, and

an ITO film having a Sn dopant activity defined as [(carrier density (cm^{-3})/Sn density in said ITO film (number of Sn/cm^{3}) X 100] greater than 80%.

23. A substrate having a low-resistance ITO film deposited thereon according to claim 22, wherein said ITO film has a resistivity lower than $1 \times 10^{-4}\ \Omega cm$.

24. A substrate having a low-resistance ITO film deposited thereon according to claim 22, wherein a patterning is formed

in said ITO film.

25. A substrate having a low-resistance ITO film deposited thereon according to claim 23, wherein a patterning is formed in said ITO film.